Call for the selection of no. 1 temporary research associate position:

The University of Pisa announces the public selection, assessed by qualifications and interview, for the assignment of n. 1 grant for research activities (hereinafter referred as "research grants") as provided in the Annex A, with a specific tab for each project listing the reference structure, the research object, the scientific field, a summary of the background and skills of the fellow, information relating to the interview.

Research grants will be funded on the POR FSE TOSCANA 2014-2020 resources in the frame of the Regione Toscana project Giovanisì (www.giovanisi.it), aiming to enhance young people's autonomy.

Successful candidates will have to carry out their research activities mainly (at least 50% of the research activity period) with one of the operators of the regional cultural and creative network that collaborates on the project and is a mandatory component of the partnership.

Contract duration: 24 months

Gross annual salary: € 28.000,00

Admission requirements:

- Hold a master degree at the time of application submission;

- Be under the age of 36 by the application submission;

Successful candidates currently holding other fellowships or research grants, are asked to renounce before the acceptance of the research grants referred in this notice, without prejudice to the provisions stated in the Law 30/12/2010 n. 240, art. 22, subparagraph III (exception laid down for the scholarships awarded by national or foreign institutions and aiming to complement the research activities with a stay abroad).

The selection does not enable nationality limitations and follows the cross-cutting priorities of gender equality and equal opportunities.

Applications:
Applications shall be submitted online only, at the following link: https://pica.cineca.it/unipi/

or shall be invalid. It is necessary to have an email address to login and complete the application.

Applicants should fill in all the required data and upload all documents in PDF format.

The system allows saving a draft of the application within the application deadline. The system will register the online application date and send a receipt with an automatic e-mail reply. After deadline, the system will not allow login nor application submission.

In order to be valid, application shall include all the required data, applicant's signature and a valid identification document.

Each application will be assigned a unique identification number to be referred to in all subsequent communications, together with the selection code provided by the application form.

Applicants undertake to communicate in writing any variations of what declared in the application form.

The communication shall be edited in PDF format, signed and forwarded to the Rector of the University of Pisa by the   Italian certified e-mail system address (P.E.C. Posta Elettronica Certificata): protocollo@pec.unipi.it or via e-mail at: concorsi_assegni@unipi.it within the application's deadline. Applicant's valid identification document should be annexed.

For further information on application submission, please refer to concorsi_assegni@unipi.it
For any IT malfunctioning please refer to unipi@cineca.it.

Applications shall be completed with the following annexes:

1. A training-learning-research project with details of the outcomes and the professional development the candidate aims to achieve through the participation in the selected research project;
2. A self-attested Curriculum of the personal education, post graduate degrees, scientific experiences and research products (publications, patents, etc.**);**
3. The qualifications the applicant considers eligible for this selection;
4. The Publications the applicant considers eligible for this selection;
5. A list of Publications and qualifications;
6. A copy of the fiscal code (if applicable) and identification card/passport;

All publications format should not exceed 30 megabyte and should be submitted in PDF <u>only</u>, using the specific section of the application form.

Selection procedure:

For each selection procedure the Director of the University Department involved in the research project will appoint a committee of three members.
The selection is assessed by qualifications and interview.
For the selection the committee will evaluate:

a) the consistency between the training-learning-research project the candidate proposed and the specific research project;

b) the consistency between the curriculum vitae, the course of study, the research experiences made and the requested project profile;

c) the academic qualifications and the number and quality of research results achieved (publications, patents, etc.);

d) the rating obtained by the interview, which is intended to assess attitude, motivation and background of the candidate participating in the project.

The rating assigned to the candidates as for point b) shall not be less than 40% of the total rating achievable and the rating assigned to the candidates as for point c) shall not be less than 30% of the total rating achievable.

For the interviews timetable, please refer to each research grant tab annexed to this call.

The candidates are invited to check the University website (https://www.unipi.it/ateneo/bandi/assegni/index.htm) during the two days before the date set for the interview.

The failed attendance to the interview will be considered as a voluntary renunciation.

Upon the Selection Committee approval, candidates committed abroad and therefore unable to attend to the interview at the University of Pisa, will be allowed to be interviewed via the web, prior applicant's identification by approved international universities or research centers. The Selection Committee is appointed to establish the duly examination of the candidates and shall acquire each candidate's copy of ID or passport.

The research grants will be allocated no later than 20 March 2020, as required by the call for selection of the Regione Toscana.

Please note that the English version is given as a matter of courtesy, for the only purpose of information. It cannot be legally used in the event of a dispute or a claim arising from the interpretation of this translation and concerning the contents, a possible uncertainty, contradiction or discrepancy. Should this occurs, the Italian version of the call shall prevail as the only valid. For full Italian text, please see: https://www.unipi.it/ateneo/bandi/assegni/index.htm.

Department of Civil and Industrial Engineering

Acronym "SOFTIMU"

Project Title funded by the Tuscany Region:

"Development of software and innovative test procedures for the assessment of historical masonry buildings"

Scientist in charge of the Research Project funded by the Tuscany Region:

Prof. Pietro Croce

Title of the Research activity:

"Software and innovative test procedures for the vulnerability assessment of historical buildings"

Project summary:

The research project aims to define a robust and reliable software for the assessment of the seismic performance of historical masonry buildings and to develop innovative test procedures for the diagnostic investigation of historical masonry structures belonging to the Tuscan cultural heritage.
In the framework of a research agreement for the assessment of the seismic vulnerability of more than 80 school masonry buildings in the Municipality of Florence, the proposing research group developed an original software for non-linear static analysis of masonry structure called E-PUSH. SOFTINMU aims to extend, in an innovative way, the applicability of E-PUSH software to the analysis of historical masonry structures, which are characterized by high seismic vulnerability and should comply with specific Guidelines. Moreover, aim of the research project is to test innovative experimental procedures, less invasive and more reliable than the current ones, such as the in-situ shear compression test to directly determine the behavior of masonry panel under seismic actions.
The need of this project is motivated by the observation that commercial software for non-linear analysis of masonry structure often provide contradictory results, which are hardly comparable because they are so sensitive to input data that require very skilled users and a continuous update of the structural model based on the outcomes, to avoid inconsistent conclusions which are not justified by the real physical behavior.
E-PUSH, which relies on an objective modelling scheme independent on the user and requires reduced computational costs, has been tested on more than 40 case studies providing comparable results with those obtained with commercial software and more complex models by expert users. The cases studies confirm that the outcomes of the non-linear analysis is largely dependent on both the masonry mechanical parameter and the adopted failure criteria, which are characterized by high uncertainty and difficulty to measure. The results of a sensitivity analysis highlights the need to deepen the research study, both for the improvement of E-PUSH for the analysis of cultural heritage and for the definition of suitable procedure for the estimation of masonry mechanical parameter by means of an innovative in-situ shear test.
The research program include the analysis of relevant case studies, such as Palazzo Toscanelli, location of the National Archive in Pisa, the National Museum of Saint Matthew and the building of the University Library, to validate the proposed procedure.

Scientific discipline sector:

ICAR 09 – Structural engineering

Number of fellowships:

1

Summary of the background and skills of the fellow:

The research fellow must prove to have a Master Degree in Civil Engineering (LM-23) or Construction Engineering (LM-24) or Architecture and Architectural Engineering (LM-4) with experience in the field of preservation of cultural heritage and assessment of seismic vulnerability of masonry structures,
Indeed, the research project will allow training a researcher with expertise in the field of structural engineering, especially in the diagnostic investigation and structural strengthening, restoration and preservation of cultural heritage, structural modelling and analysis of masonry structures, but also with expertise in computer programming for the software implementation.
The temporary research fellow will gain expertise also in the field of data storage and management in cloud.
Expertise will be also attained in the field of structural diagnostic, especially for masonry structures, and in the carrying out of non-destructive and semi-destructive in-situ and in laboratory tests.
The research fellow will also extended the field of applicability of the E-PUSH software relying on the recommendations provided by the "Guidelines for the assessment and the reduction of seismic risk for cultural heritage" comparing the results with those obtained with other commercial software.
The researcher will also contribute to develop the new version of the software, making it freely available under Creative Commons license.
Finally, the researcher will work on the set-up of an innovative test arrangement for the assessment of shear behavior of masonry panels.

Fellow's Supervisor

Prof. Pietro Croce

Date, time and place of the interview:

10th **March 2020 - 10.30 am – Department of Civil and Industrial Engineering – Administration (building B45) – Largo Lazzarino, 1, Pisa.**